

A21NM
Revision 10
Construcciones Aeronauticas, S.A.
Model CN-235
CN-235-100
CN-235-200
CN-235-300
C-295
January 21, 2010

This data sheet, which is part of Type Certificate No. A21NM, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder EADS CASA
(formerly known as Construcciones Aeronauticas, S.A.)
Avenida de Aragon 404
28022 Madrid, Spain

I. Model CN-235 (Transport Category Airplane) approved 3 December, 1986:

Engines	Two (2) engines - General Electric Company, Model CT7-7A, free turbine turboprop.*
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Power turbine/propeller reduction gearing 15.9:1.

Fuel (a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:

<u>Designation</u>	<u>Specification</u>
Jet A, A-1, B	ASTM D1655
JP-4, JP-5	MIL-T-5624
JP-8	MIL-T-83133

(b) For approved fuel additives, see General Electric Company jet fuel specification D50TF2, current approved revision.

Anti-icing additives to specification MIL-I-27686E may be used to a concentration not in excess of 0.15% by volume.

**CT7-7A engines are to be equipped with redundant propeller speed sensors (NP) per General Electric Engineering Change Number 270598 (General Electric Service Bulletin 72-112 “Engine-General-Installation of PGC drive shaft speed sensor on CT7-7A Turboprop Engine”) or FAA engineering approved equivalent.*

Engine Limits

The Maximum Continuous and Takeoff Static Sea Level rating at ISA:

Condition	Maximum Time Limit	Maximum Torque (FT - LBS)	Maximum ITT (°C)	Maximum NH (RPM)	Rated Shaft Horsepower (HP)
Takeoff	5 min.	413	930	45,000	1700
Max. Cont.	Cont.	413	917	44,720	1700
Transient Starting	12 sec.	475	960 950	47,000	

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Maximum Weights	Maximum Ramp	31,862 lb	(14,450 kg)
	Maximum Takeoff	31,752 lb	(14,400 kg)
	Maximum Landing	31,311 lb	(14,200 kg)
	Maximum Zero Fuel	29,988 lb	(13,600 kg)
	Minimum Flight	19,183 lb	(8,700 kg)
Minimum Crew	Two (2): pilot and co-pilot		
Maximum Passengers	39		
Maximum Baggage	1,654 lb (750 kg) in rear cargo compartment. See the appropriate Weight and Balance Manual listed herein.		
Fuel Capacity	Usable fuel (see Note 1 for unusable fuel):		

Location	Volume (U.S. Gal.)	Weight (lb)	Moment Arm (in)
Right Wing	Main	270	1809
	Aux	420	2814
Left Wing	Main	270	1809
	Aux	420	1814
TOTAL USABLE	1380	9246	411.26

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.

Pressure fueling: Maximum pressure for pressure fueling is 50 psi.

Oil Capacity	<u>Volume (U.S. -quarts)</u>	<u>Moment Arm (in)</u>
	7.3 U.S. qt./tank on each engine	+350.47
	3.8 U.S. qt/tank usable	
	5.0 U.S. qt/tank on each propeller gear box	+315.97
	1.5 U.S. qt/tank usable	

Maximum Operating Altitude 25,000 ft. (18,000 ft. for passenger transportation)

Control Surface Movements	Elevator:	Up $30.0^{\circ} \pm 0.5^{\circ}$	Down $15.0^{\circ} \pm 0.5^{\circ}$
	Up to A/C Serial Number C-005:		
	Elevator Trim Tabs :	Up $0.5^{\circ} \pm 0.5^{\circ}$	Down $8.5^{\circ} \pm 0.5^{\circ}$
	From Serial Number C-006:		
	Normal Trim Tab:	Up $-0.5^{\circ} \pm 0.5^{\circ}$	Down $9.5^{\circ} \pm 0.5^{\circ}$
	Emergency Trim Tab:	Up $2.0^{\circ} \pm 0.5^{\circ}$	Down $7.0^{\circ} \pm 0.5^{\circ}$
	Elevator balance tab:		
		Up (for $+15^{\circ}$ elevator)	$1.75^{\circ} \pm 0.5^{\circ}$
		Down (for -30° elevator)	$9.50^{\circ} \pm 0.5^{\circ}$
	Rudder:	Right $17.0^{\circ} \pm 0.25^{\circ}$	Left $12.0^{\circ} \pm 0.25^{\circ}$
	Rudder trim tab:	Right $5.0^{\circ} \pm 0.5^{\circ}$	Left $3.0^{\circ} \pm 0.5^{\circ}$
	Rudder balance tab:	Right (for $+12^{\circ}$ rudder)	$2.5^{\circ} \pm 0.25^{\circ}$
		Left (for -17° rudder)	$5.0^{\circ} \pm 0.25^{\circ}$

Control Surface Movements

Ailerons:	Up $20.0^{\circ} \pm 0.5^{\circ}$	Down $20.0^{\circ} \pm 0.5^{\circ}$
Aileron trim tab:	Up $8.0^{\circ} \pm 0.5^{\circ}$	Down $8.0^{\circ} \pm 0.5^{\circ}$
Aileron balance tabs:		
Trailing edge up for aileron 0° :		$5.0^{\circ} \pm 0.5^{\circ}$
Trailing edge down for aileron 20° up:		$8.0^{\circ} \pm 0.5^{\circ}$
Trailing edge up for aileron 20° down:		$18.0^{\circ} \pm 0.5^{\circ}$

Flaps (inner and outer)

Cruise	$0.0^{\circ} \pm 0.5^{\circ}$
Takeoff	$8.0^{\circ} \pm 0.5^{\circ}$
Approach	$10.0^{\circ} \pm 0.5^{\circ}$
Landing	$23.0^{\circ} \pm 0.5^{\circ}$

All measurements are taken at trailing edge from neutral position.

Serial Nos. Eligible

A Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for United States certification is made.

Import Requirements

The FAA can issue a U.S. airworthiness certificate based on an Export Certificate of Airworthiness (Export C of A) signed by a representative of the Spanish DGAC on behalf of the European Community. The Export C of A should contain the following statement: 'The aircraft covered by this certificate has been examined, tested, and found to conform with the Type Design approved under U.S. Type Certificate No. A21NM and to be in a condition for safe operation.'

Only CN235 airplane manufactured in Spain and accompanied by a Spanish export certificate of airworthiness are eligible for a United States Airworthiness Certificate.

Certification Basis

14 CFR Section 21.29 and 14 CFR Part 25, effective 1 February 1965, including Amendments 25-1 through 25-54.

Federal Aviation Administration Exemption No. NM-103, from 14 CFR Section 25.571 (e) (2), issued on January 20, 1984.

Special Federal Aviation Regulation No. 27, effective 1 February 1974, including Amendments 27-1 through 27-5 (Fuel Venting and Exhaust Emissions).

14 CFR Part 36, effective 1 December 1969, including Amendments 36-1 through 36-12.

Equivalent safety findings exist with respect to the following regulation: 14 CFR Section 25.1305 (a) (2): Fuel Quantity Indicator.

Construcciones Aeronauticas, S.A. elected to demonstrate compliance with: 14 CFR Section 25.1419: Ice Protection.

Date of Application for Type Certificate: 3 December 1981.

The Spanish DGAC originally type certificated this aircraft under its type certificate Number 01-86. The FAA validated this product under U.S. Type Certificate number A21NM. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the Spanish DGAC.

14 CFR part 26 – Continued Airworthiness and Safety Improvements for Transport Category Airplanes:

Based on 14 CFR § 21.29(a) for new import Type Certificates (TCs), (or 14 CFR § 21.101(g) for changes to TCs), applicable provisions of 14 CFR part 26 are included in the certification basis. For any future 14 CFR part 26 amendments, the holder of this TC must demonstrate compliance with the applicable sections.

Required Equipment	<p>The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.</p> <p>Equipment approved for the Construcciones Aeronauticas, S.A. Model CN-235 is listed in CASA Document No. 86-3309, Master Equipment List, dated July 1986 or as revised and approved by the DGAC.</p> <p>Federal Aviation Administration (FAA) approve Airplane Flight Manual Construcciones Aeronauticas, S.A. Model CN-235, Document No. D.T. 85-3503, published in the English language (EASA approved on behalf of the FAA on 11 January 2008 or later EASA approved revision), is required.</p>
Service Information	<p>Each of the documents listed below must state that it is approved by EASA – or for approvals made before September 28, 2003 – by the Spanish DGAC. Any such documents are accepted by the FAA and are considered FAA approved. <u>Additionally, approvals issued by Construcciones Aeronauticas, S.A. under the authority of EASA approved Design Organization EASA.21J.032 - or for approvals made before September 28, 2003 - under the authority of Spanish DGAC Design Organization Approval No. 1 are considered FAA approved. These approvals pertain to the type design only.</u></p> <ul style="list-style-type: none"> ▪ TC holder Service Bulletins, except as noted below, ▪ Structural repair manuals ▪ Vendor manuals referenced in TC holder Service Bulletins ▪ Airplane flight manuals ▪ Repair instructions. <p>Note: Design changes that are contained in TC holder Service Bulletins and that are classified as Level 1 Major in accordance with either the US/Spain or US/EASA Bilateral Aviation Safety Agreement – Implementation Procedures for Airworthiness, must be approved by the FAA.</p>
Available Documents	<p>- Airplane Weight and Balance Control and Loading Data Document No. D.T. 85-3502.</p> <p>- Maintenance Review Board Report, Document No. MRB CN-235-PV.01.</p>

NOTES

NOTE 1 Weight and Balance:

(a) A current Weight and Balance Report must be in each aircraft at the time of original airworthiness certification and at all times thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.

(b) The airplane empty weight and corresponding center of gravity location must include:
 Total engine and gearbox oil: 47.6 lb at Sta 336.44 in.
 Total hydraulic fluid: 39.03 lb at Sta 461.22 in.
 Unusable fuel (77.05 lb) listed as follows:

<u>Unusable Fluid</u>	<u>U.S. Gallons</u>	<u>Pounds</u>	<u>Moment Arm (in)</u>
Drainable:			
Left Wing	4.25	28.47	409.68
Right Wing	4.25	28.47	409.68
Trapped Fuel:			
Tanks and fuel lines	3.00	20.10	410.07
Total unusable fuel	11.50	77.05	409.76

(c) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.

- NOTE 2 Airplane operation must be in accordance with the Airplane Flight Manual (AFM) listed above.
- NOTE 3 Required structural inspections, inspection times, and retirement times for structural parts and for components are listed in the Airworthiness Limitations as presented in Section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this Section must not be changed without FAA approval.
- NOTE 4 Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in Section 1.4.1 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA approval.
- NOTE: The CMR's may also be included in any appendix to the Maintenance Review Board Document No. MRB CN-235-PV.01.

II. Model CN-235-100 (Approved October 26, 1989)

Engines 2 Engines - General Electric Company, Model CT7-9C, free turbine turboprop. Power turbine/propeller reduction gearing 15.9:1.

Fuel (a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:

<u>Designation</u>	<u>Specification</u>
Jet A, A-1, B	ASTM D1655
JP-4, JP-5	MIL-T-5624
JP-8	MIL-T-83133

(b) For approved fuel additives, see General Electric Company jet fuel specification D50TF2, current approved revision.

Anti-icing additives to specification MIL-I-27686E may be used to a concentration not in excess of 0.15% by volume.

Engine Limits

The Maximum continuous and takeoff static level rating at ISA:

Conditions	Shaft Horse Power	Jet Thrust (lb)	Torque Meter Reading (ft - lb)	ITT (°C)	Engine RPM
Takeoff (normal)	1750	168	425	921*	45,300**
Takeoff (APR on)	1870	179	454	950	45,615
Max Continuous	1750	168	425	917	45,614

*When OAT is lower than 35°C, ITT limit is 921°C. When OAT is between 35°C and 41°C the ITT limit has a lineal variation with the OAT, from 921°C to 944°C at sea level. When OAT is higher than 41°C the ITT limit is 950°C at sea level.

** If OAT is higher than 41°C, the takeoff limit with APR on is applied.

Propeller and Propeller Limits

2 Propellers - Hamilton Standard Model - 14 RF-21.
Blades: 4, Model RFC11R1-0C.
Diameter: 132.24 in. max., 131.94 in. min.

Blade angle measured a 42 in. - radius - station:

Ground Idle	-3.7° ± 1.0°
Max Reverse	-12.4° ± 1.3°
Feather	80.8° ± 0.5°

Flight Idle $16.7^{\circ} \pm 0.8^{\circ}$

Propeller Spinner: Hamilton Standard, P/N 790185-1
 Propeller Deicer: Included in blade P/N

Airspeed Limits (IAS)

Unless otherwise noted below, speeds are - indicated airspeeds.

V_{MO} (Maximum Operating) (See NOTE 5)

Sea Level 240 knots
 20,000 ft 210 knots
 25,000 ft 190 knots

Straight line variation between points.

V_A (Maneuvering)

Sea level to 25,000 ft 160 knots

V_{FE} (Flaps Extended)

10° (Takeoff) 160 knots
 15° (Approach) 160 knots
 23° (Landing) 150 knots

V_{LE} (Landing Gear Extended) 150 knots

For other airspeed limits, see the appropriate FAA Approved Airplane Flight Manual listed below.

C.G. Range

See the appropriate FAA Approved Airplane Flight Manual listed below.

Datum

Sta 0.0 is located 92.40 in. forward of the fuselage jig point (rivet), which is located on the underside fuselage skin, immediately forward of fuselage frame 1A.

Mean Aerodynamic Chord (MAC)

Length: 100.83 in.
 L.E. of MAC: 377.61 in aft of datum

Leveling Means

Plumb-bob suspended from aft face of aft cockpit compartment bulkhead over reticule on floor.

Maximum Weights (See NOTE 5)

Maximum Ramp	31,862 lb.	(14,450 kg)
Maximum Takeoff	31,752 lb	(14,400 kg)
Maximum Landing	31,311 lb	(14,200 kg)
Maximum Zero Fuel	29,988 lb	(13,600 kg)

Minimum Crew

Two (2): Pilot and co-pilot

Maximum Passengers

44

Maximum Baggage

1654 lb (750 kg) in rear cargo compartment. See the appropriate Weight and Balance Manual listed below.

Fuel Capacity

Usable f+uel (see Note 1 for unusable fuel):

Location	Volume (U.S. Gal.)	Weight (lb)	Moment Arm (in)
Right Wing	Main 270	1809	409.45
	Aux 420	2814	412.45
Left Wing	Main 270	1809	409.45
	Aux 420	1814	412.45
TOTAL USABLE	1380	9246	411.26

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.

	Pressure fueling: Maximum pressure for pressure fueling is 50 psi.		
Oil Capacity	<u>Volume (U.S. -quarts)</u>	<u>Moment Arm (in)</u>	
	7.3 U.S. qt./tank on each engine	+350.47	
	3.8 U.S. qt/tank usable		
	5.0 U.S. qt/tank on each propeller gear box	+315.97	
	1.5 U.S. qt/tank usable		
Maximum Operating Altitude	25,000 ft. (18,000 ft. for passenger transportation)		
Control Surface Movements	Elevator:	Up $30.0^{\circ} \pm 0.5^{\circ}$	Down $15.0^{\circ} \pm 0.5^{\circ}$
	Elevator tab (trim)	Up $-0.5^{\circ} \pm 0.5^{\circ}$	Down $9.5^{\circ} \pm 0.5^{\circ}$
	Elevator tab (emergency trim)	Up $2^{\circ} \pm 0.5^{\circ}$	Down $7.0^{\circ} \pm 0.5^{\circ}$
	Elevator balance tab:		
		Up (for $+15^{\circ}$ elevator)	$1.75^{\circ} \pm 0.5^{\circ}$
		Down (for -30° elevator)	$9.50^{\circ} \pm 0.5^{\circ}$
	Rudder:	Right	$17.0^{\circ} \pm 0.25^{\circ}$
		Left	$12.0^{\circ} \pm 0.25^{\circ}$
	Rudder trim tab:	Right	$5.0^{\circ} \pm 0.5^{\circ}$
		Left	$3.0^{\circ} \pm 0.5^{\circ}$
	Rudder balance tab:		
		Right (for rudder 12° left)	$2.5^{\circ} \pm 0.25^{\circ}$
		Left (for rudder 17° right)	$5.0^{\circ} \pm 0.25^{\circ}$
	Ailerons:	Up $20.0^{\circ} \pm 0.5^{\circ}$	Down $20.0^{\circ} \pm 0.5^{\circ}$
	Aileron trim tabs:	Up $8.0^{\circ} \pm 0.5^{\circ}$	Down $8.0^{\circ} \pm 0.5^{\circ}$
	Aileron balance tabs:		
		trailing edge up for aileron 0° :	$5.0^{\circ} \pm 0.5^{\circ}$
	trailing edge down for aileron 20° up:	$8.0^{\circ} \pm 0.5^{\circ}$	
	trailing edge up for aileron 20° down:	$18.0^{\circ} \pm 0.5^{\circ}$	
Flaps (inner and outer)			
	Cruise	$0.0^{\circ} \pm 0.5^{\circ}$	
	Takeoff	$10.0^{\circ} \pm 0.5^{\circ}$	
	Approach	$15.0^{\circ} \pm 0.5^{\circ}$	
	Landing	$23.0^{\circ} \pm 0.5^{\circ}$	
	All measurements are taken at trailing edge from neutral position.		
Serial Nos. Eligible	The Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for certification is made.		
Import Requirements	<p>The FAA can issue a U.S. airworthiness certificate based on an Export Certificate of Airworthiness (Export C of A) signed by a representative of the Spanish DGAC on behalf of the European Community. The Export C of A should contain the following statement: 'The aircraft covered by this certificate has been examined, tested, and found to conform with the Type Design approved under U.S. Type Certificate No. A21NM and to be in a condition for safe operation.'</p> <p>"Only CN-235-100 airplanes manufactured in Spain and accompanied by a Spanish export certificate of airworthiness are eligible for a United States airworthiness certificate."</p>		
Certification Basis	<p>14 CFR Section 21.29 and 14 CFR Part 25, effective 1 February 1965, including Amendments 25-1 through 25-59, 25-61 and 25-62.</p> <p>Federal Aviation Administration Exemption No. Nm-103, from 14 CFR Section 25.571 (e) (2), issued on January 20,1984.</p>		

Special Federal Aviation Regulation No. 27, effective 1 February 1974, including Amendments 27-1 through 27-5 (Fuel Venting and Exhaust Emissions).

14 CFR Part 36, effective 1 December 1969, including Amendments 36-1 through 36-15. The CN-235-100 weight increase to 15,100 kg (33295 lbs) takeoff weight and 14,900 kg (32854 lbs) max landing weight, incorporating Service Bulletin 235-34-04 or CASA Document CDS) No 37-49 includes Amendment 36-17.

Equivalent safety findings exist with respect to the following regulation: 14CFR Section 25.1305 (a) (2): Fuel Quantity Indicator.

The Special Conditions No. 25-ANM-22 (Docket no. NM-35), dated December 13, 1988, "Lightning and Radio Frequency (RF) Energy Protection".

Construcciones Aeronauticas S.A. elected to demonstrate compliance with: 14 CFR Section 25.1419: Ice Protection.

Date of Application for Amended Type Certificate: May 12, 1987.

Date of Application for the CN-235-100 weight increase: April 3, 1991.

The Spanish DGAC originally type certificated this aircraft under its type certificate Number 01-86. The FAA validated this product under U.S. Type Certificate number A21NM. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the Spanish DGAC.

14 CFR part 26 – Continued Airworthiness and Safety Improvements for Transport Category Airplanes:

Based on 14 CFR § 21.29(a) for new import TCs, (or 14 CFR § 21.101(g) for changes to TCs), applicable provisions of 14 CFR part 26 are included in the certification basis. For any future 14 CFR part 26 amendments, the holder of this TC must demonstrate compliance with the applicable sections.

Equipment

The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.

Equipment approved for the Construcciones Aeronauticas, S.A. CN-235-100 is listed in CASA Document No. 88-3003, Master Equipment List, dated July 1988 or as revised and approved by DGAC.

Federal Aviation Administration (FAA) approved Airplane Flight Manual, Construcciones Aeronauticas, S.A. Model CN-235-100, Document No. D.T. 87-3501, published in the English language (DGAC approved on behalf of the FAA on December 9, 1988 or later DGAC approved revision) is required. (See NOTE 5)

Service Information

Each of the documents listed below must state that it is approved by EASA – or for approvals made before September 28, 2003 – by the Spanish DGAC. Any such documents are accepted by the FAA and are considered FAA approved. Additionally, approvals issued by Construcciones Aeronauticas, S.A. under the authority of EASA approved Design Organization EASA.21J.032 - or for approvals made before September 28, 2003 - under the authority of Spanish DGAC Design Organization Approval No. 1 are considered FAA approved. These approvals pertain to the type design only.

- TC holder Service Bulletins, except as noted below,
- Structural repair manuals
- Vendor manuals referenced in TC holder Service Bulletins
- Airplane flight manuals
- Repair instructions.

Note: Design changes that are contained in TC holder Service Bulletins and that are classified as Level 1 Major in accordance with either the US/Spain or US/EASA Bilateral Aviation Safety Agreement – Implementation Procedures for Airworthiness, must be approved by the FAA.

Available Documents - Airplane Weight and Balance Control and Loading Data Document No. D.T. 85-3502. (See NOTE 5).

- Maintenance Review Board Report, Document No. MRB CN-235-PV.01.

NOTES

NOTE 1 Weight and Balances

(a) A current Weight and Balance must be in each aircraft at the time of original airworthiness certification and at all times thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.

(b) The airplane empty weight and corresponding center of gravity location must include:

Total engine and gearbox oil 47.6 lb at Sta 335.57 in.

Type hydraulic fluid of 39.03 lb at Sta 460.35 in.

Unusable fuel (77.05 lb) listed as follows:

<u>Unusable Fluid</u>	<u>U.S. Gallons</u>	<u>Pounds</u>	<u>Moment Arm (in)</u>
Drainable:			
Left Wing	4.25	28.47	409.68
Right Wing	4.25	28.47	409.68
Trapped Fuel:			
Tanks and fuel lines	3.00	20.10	410.07
Total unusable fuel	11.50	77.05	409.76

(c) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.

NOTE 2 Airplane operation must be in accordance with the Airplane Flight Manual (AFM) listed above. All placards required in either the approved AFM, the application operating rules, or the certification basis must be installed in the airplane.

NOTE 3 Required structural inspections, inspections times, and retirement times for structural parts and for components are listed in the Airworthiness Limitation as presented in Section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.

NOTE 4 Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in section 1.4.1 of covered in this section must not be changed without FAA engineering approval.

NOTE: The CMR's may also be included in any appendix to the Maintenance Review Board Document No. MRB CN-235-PV.01.

NOTE 5 For aircraft Model CN-235-100 incorporating CASA Service Bulletin S.B. 235-34-04 or the modification defined by the CASA Document CDS 3749, the previously established limitations to the parameters mentioned below, are modified in the following way:

Airspeed Limits (IAS)

V_{MO} (Maximum Operating)

Sea Level	232 knots
20,000 ft	202 knots
25,000 ft 1	82 knots

Straight line variation between points.

Maximum Weights

Maximum Ramp	33,405 lb	(15,150 kg)
Maximum Takeoff	33,295 lb	(15,100 kg)
Maximum Landing	32,854 lb	(14,900 kg)
Maximum Zero	31,090 lb	(14,100 kg)

Also applicable with the Airplane Flight Manual, Document D.T. 90-3504, is the Airplane Weight and Balance Control and Loading Data Document No. D.T. 90-3505, FAA approval of the CN-235-100 weight increase was given on February 21, 1999

III. Model CN-235-200 (Approved March 13, 1992)

Engines 2 Engines - General Electric Company, Model CT7-9C, free turbine turboprop. Power turbine/propeller reduction gearing 15.9:1.

Fuel (a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:

<u>Designation</u>	<u>Specification</u>
Jet A, A-1, B	ASTM D1655
JP-4, JP-5	MIL-T-5624
JP-8	MIL-T-83133

(b) For approved fuel additives, see General Electric Company jet fuel specification D50TF2, current approved revision.

Anti-icing additives to specification MIL-I-27686E may be used to a concentration not in excess of 0.15% by volume.

Engine Limits The Maximum continuous and takeoff static level rating at ISA:

Conditions	Shaft Horse Power	Jet Thrust (lb)	Torque Meter Reading (ft - lb)	ITT (°C)	Engine RPM
Takeoff (normal)	1750	168	425	921*	45,300**
Takeoff (APR on)	1870	179	454	950	45,615
Max Continuous	1750	168	425	917	45,614

*When OAT is lower than 35°C, ITT limit is 921°C. When OAT is between 35°C and 41°C the ITT limit has a lineal variation with the OAT, from 921°C to 944°C at sea level. When OAT is higher than 41°C the ITT limit is 950°C at sea level.

** If OAT is higher than 41°C, the takeoff limit with APR on is applied.

Propeller and Propeller Limits 2 Propellers - Hamilton Standard Model - 14 RF-21.
Blades: 4, Model RFC11R1-0C.
Diameter: 132.24 in. max., 131.94 in. min.

Blade angle measured a 42 in. - radius - station:

Ground Idle	-3.7° ± 1.0°
Max Reverse	-12.4° ± 1.3°
Feather	80.8° ± 0.5°
Flight Idle	16.7° ± 0.8°

Propeller Spinner: Hamilton Standard, P/N 790185-1
Propeller Deicer: Included in blade P/N

Airspeed Limits (IAS) Unless otherwise noted below, speeds are - indicated airspeeds.
V_{MO} (Maximum Operating)

Sea level 232 knots
 20,000 ft 202 knots
 25,000 ft 182 knots
 Straight line variation between points.

V_A (Maneuvering)
 Sea level to 25,000 ft 160 knots

V_{FE} (Flaps Extended)
 10° (Takeoff) 160 knots
 15° (Approach) 160 knots
 23° (Landing) 150 knots

V_{LE} (Landing Gear Extended) 150 knots For other airspeed limits, see the appropriate FAA Approved Airplane Flight Manual listed below.

C.G. Range See the appropriate FAA Approved Airplane Flight Manual listed below.

Datum Sta 0.0 is located 92.40 in. forward of the fuselage jig point (rivet), which is located on the underside fuselage skin, immediately forward of fuselage frame 1A.

Mean Aerodynamic Chord (MAC) Length: 100.83 in.
 L.E. of MAC: 377.61 in. aft of datum

Leveling Means Plumb-bob suspended from aft face of aft cockpit compartment bulkhead over reticule on floor.

Maximum Weights
 Maximum Ramp 34940 lb (15850 kg)
 Maximum Takeoff 34830 lb (15800 kg)
 Maximum Landing 34390 lb (15600 kg)
 Maximum Zero Fuel 31080 lb (14100 kg)

Minimum Crew Two (2): Pilot and co-pilot

Max. Passengers 44

Maximum Baggage 1985 lb (900 kg) in rear cargo compartment. See the appropriate Weight and Balance Manual listed below.

Fuel Capacity Usable fuel (see Note 1 for unusable fuel):

Location	Volume (U.S. Gal.)	Weight (lb)	Moment Arm (in)
Main	270	1809	409.45
Right Wing Aux	420	2814	412.45
Main	270	1809	409.45
Left Wing Aux	420	1814	412.45
TOTAL USABLE	1380	9246	411.26

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.
 Pressure fueling: Maximum pressure for pressure fueling is 50 psi.

Oil Capacity
Volume (U.S. -quarts) Moment Arm (in)
 7.3 U.S. qt./tank on each engine +350.47
 3.8 U.S. qt/tank usable
 5.0 U.S. qt/tank on each propeller gear box +315.97
 1.5 U.S. qt/tank usable

Maximum Operating Altitude 25,000 ft. (18,000 ft. for passenger transportation)

Control Surface Movements	Elevator:	Up $30.0^\circ \pm 0.5^\circ$	Down $15.0^\circ \pm 0.5^\circ$
	Elevator tab (trim)	Up $+0.5^\circ \pm 0.5^\circ$	Down $+11^\circ \pm 0.5^\circ$
	Elevator tab (emergency trim)	Up $2^\circ \pm 0.5^\circ$	Down $7.0^\circ \pm 0.5^\circ$
	Elevator balance tab:	Up (for $+15^\circ$ elevator) $1.75 \pm 0.5^\circ$ Down (for -30° elevator) $9.50 \pm 0.5^\circ$	
	Rudder:	Right $19.0^\circ \pm 0.5^\circ$ Left $15.0^\circ \pm 0.5^\circ$	
	Rudder trim tab:	Right $5.0^\circ \pm 0.5^\circ$ Left $3.0^\circ \pm 0.5^\circ$	
	Rudder balance tab:	Right (for rudder 15° left) $2.0^\circ \pm 0.5^\circ$ Left (for rudder 19° right) $5.25^\circ \pm 0.5^\circ$	
	Ailerons:	Up $20.0^\circ \pm 0.5^\circ$	Down $20.0^\circ \pm 0.5^\circ$
	Aileron trim tabs:	Up $8.0^\circ \pm 0.5^\circ$	Down $8.0^\circ \pm 0.5^\circ$
	Aileron balance tabs:		
	trailing edge up for aileron 0° :	$5.0^\circ \pm 0.5^\circ$	
	trailing edge down for aileron 20° up:	$8.0^\circ \pm 0.5^\circ$	
	trailing edge up for aileron 20° down:	$18.0^\circ \pm 0.5^\circ$	
	Flaps (inner and outer)		
	Cruise	$0.0^\circ \pm 0.5^\circ$	
	Takeoff	$10.0^\circ \pm 0.5^\circ$	
	Approach	$15.0^\circ \pm 0.5^\circ$	
	Landing	$23.0^\circ \pm 0.5^\circ$	

All measurements are taken at trailing edge from neutral position.

Serial Nos. Eligible The Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for certification is made.

Import Requirements The FAA can issue a U.S. airworthiness certificate based on an Export Certificate of Airworthiness (Export C of A) signed by a representative of the Spanish DGAC on behalf of the European Community. The Export C of A should contain the following statement: 'The aircraft covered by this certificate has been examined, tested, and found to conform with the Type Design approved under U.S. Type Certificate No. A21NM and to be in a condition for safe operation.'

"Only CN-235-200 airplanes manufactured in each Spain and accompanied by a Spanish export certificate of airworthiness are eligible for a United States Airworthiness Certificate."

Certification Basis 14CFR Section 21.29 and 14 CFR Part 25, effective 1 February 1965, including Amendments 25-1 through 25-59, 25-61 and 25-62.

Federal Aviation Administration Exemption No. NM-103, from 14 CFR Section 25.57 (e) (2), issued on January 20, 1984.

Special Federal Aviation Regulation No. 27, effective 1 February 1974, including Amendments 27-1 through 27-5 (Fuel Venting and Exhaust Emissions).

14 CFR Part 36, effective 1 December 1969, including Amendments 36-1 through 36-18.

Equivalent safety findings exist with respect to the following regulation. 14 CFR Section 25.1305 (a) (2): Fuel Quantity Indicator.

The Special Conditions No. 25-ANM-22 (Docket No. NM-35), dated December 13, 1988, "Lightning and Radio Frequency (RF) Energy Protection".

Construcciones Aeronauticas S.A. elected to demonstrate compliance with: 14 CFR section 25.1419: Ice Protection.

Date of Application for Amended Type Certificate: January 12, 1990.

The Spanish DGAC originally type certificated this aircraft under its type certificate Number 01-86. The FAA validated this product under U.S. Type Certificate number A21NM. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the Spanish DGAC.

14 CFR part 26 – Continued Airworthiness and Safety Improvements for Transport Category Airplanes:

Based on 14 CFR § 21.29(a) for new import TCs, (or 14 CFR § 21.101(g) for changes to TCs), applicable provisions of 14 CFR part 26 are included in the certification basis. For any future 14 CFR part 26 amendments, the holder of this TC must demonstrate compliance with the applicable sections.

Required Equipment

The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.

Equipment approved for the Construcciones Aeronauticas S.A. CN-235-200 is listed in CASA Document No. 90-3016, Master Equipment List, dated July 1988 or as revised and approved by DGAC.

Federal Aviation Administration (FAA) approved Airplane Flight Manual, Construcciones Aeronauticas S.A. Model CN-235-200, Document No. D.T. 91-3501, published in the English language (DGAC approved on behalf of the FAA on September 27, 1991 or later DGAC approved revision) is required.

Service Information

Each of the documents listed below must state that it is approved by EASA – or for approvals made before September 28, 2003 – by the Spanish DGAC. Any such documents are accepted by the FAA and are considered FAA approved. Additionally, approvals issued by Construcciones Aeronauticas, S.A. under the authority of EASA approved Design Organization EASA.21J.032 - or for approvals made before September 28, 2003 - under the authority of Spanish DGAC Design Organization Approval No. 1 are considered FAA approved. These approvals pertain to the type design only.

- TC holder Service Bulletins, except as noted below,
- Structural repair manuals
- Vendor manuals referenced in TC holder Service Bulletins
- Airplane flight manuals
- Repair instructions.

Note: Design changes that are contained in TC holder Service Bulletins and that are classified as Level 1 Major in accordance with either the US/Spain or US/EASA Bilateral Aviation Safety Agreement – Implementation Procedures for Airworthiness, must be approved by the FAA.

Available Documents

- Airplane Weight and Balance Control and Loading Data Document No. D.T. 91-3502.
- Maintenance Review Board Report, Document No. MRB CN-235-PV.01.

NOTES

NOTE 1

Weight and Balance:

- (a) A current Weight and Balance must be in each aircraft at the time of original airworthiness certification and at all time thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.

- (b) The airplane empty weight and corresponding center of gravity location must include:

Total engine and gearbox oil 47.6 lb at Sta 335.57 in.

Type hydraulic fluid of 39.03 lb at Sta 460.35 in.

Unusable fuel (77.05 lb) listed as follows:

<u>Unusable Fuel</u>	<u>U.S. Gallons</u>	<u>Pounds</u>	<u>Moment Arm (in)</u>
Drainable:			
Left Wing	4.25	28.47	409.68
Right Wing	4.25	28.47	409.68
Trapped Fuel:			
Tanks and fuel lines	3.00	20.10	410.07
Total unusable fuel	11.50	77.05	409.76

(c) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.

- NOTE 2 Airplane operation must be in accordance with the airplane Flight Manual (AFM) listed above. All placards required in either the approved AFM, the application operating rules, or the certification basis must be installed in the airplane.
- NOTE 3 Required structural inspections, inspections times and retirement times for structural parts and for components are listed in the Airworthiness Limitation as presented in section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.
- NOTE 4 Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in section 1.4.1. of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.
- NOTE: The CMR's may also be included in any appendix to the Maintenance Review Board Document No. MRB CN-235-PV.01.*
- NOTE 5 CN-235-100 airplanes are eligible for conversion to upgraded model CN-235-200 when CASA Service Bulletin SB235-11-06 has been incorporated and further modified as per DGAC approved Documents CDS 30040, 30049, 30178 and 30188.

IV. Model CN-235-300 (Approved December 30, 1998)

Engines 2 Engines - General Electric Company, Model CT7-9C3, free turbine turboprop. Power turbine/propeller reduction gearing 15.9:1.

Fuel (a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:

<u>Designation</u>	<u>Specification</u>
Jet A, A-1, B	ASTM D1655
JP-4, JP-5	MIL-T-5624
JP-8	MIL-T-83133

(b) For approved fuel additives, see General Electric Company jet fuel specification D50TF2, current approved revision.

Anti-icing additives to specification MIL-I-27686E may be used to a concentration not in excess of 0.15% by volume.

Engine Limits

The Maximum continuous and takeoff static level rating at ISA:

Conditions	Shaft Horse Power	ITT (°C)	Engine RPM (%)	Torque Meter Reading (%)	ESHP
Takeoff (normal)	1750	(a) (b) 917	101.3	(c) 100	1816
Max Continuous	1750	944	102.0	100	1816

Takeoff (APR on)	1870	940	102.0	107	1942
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- (a) The shown temperature value is the absolute maximum. See the appropriate FAA Approved Airplane Flight Manual listed below for the maintained ITT limits in relation with the environmental conditions.
- (b) Up to 10°C overtemperature are permitted over the maintained ITT values, for a maximum of two minutes.
- (c) The shown torque value is the absolute maximum. See the appropriate FAA Approved Airplane Flight Manual listed below for the maintained torque limits in relation with the environmental conditions.

Propeller and Propeller Limits

2 Propellers - Hamilton Standard Model - 14 RF-37.
 Blades: 4, Model RFA12A1-POC.
 Diameter: 144.84 in..
 Prohibited % rpm interval: 47% to 71%

Propeller Spinner: Hamilton Standard, P/N 790185-2
 Propeller Deicer: Included in blade P/N

Airspeed Limits (IAS)

Unless otherwise noted below, speeds are - indicated airspeeds.

V_{MO} (Maximum Operating)

Sea level	232 knots
20,000 ft	202 knots
25,000 ft	182 knots

Straight line variation between points.

V_A (Maneuvering)

Sea level to 25,000 ft	160 knots
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V_{FE} (Flaps Extended)

10° (Takeoff)	160 knots
15° (Approach)	160 knots
23° (Landing)	150 knots

V _{LE} (Landing Gear Extended)	150 knots
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For other airspeed limits, see the appropriate FAA Approved Airplane Flight Manual listed below.

C.G. Range

See the appropriate FAA Approved Airplane Flight Manual listed below.

Datum

Sta 0.0 is located 93.19 in. forward of the fuselage jig point (rivet), which is located on the underside fuselage skin, immediately forward of fuselage frame 1A.

Mean Aerodynamic Chord (MAC)

Length: 100.83 in.
 L.E. of MAC: 377.61 aft of datum

Leveling Means

Plumb-bob suspended from aft face of aft cockpit compartment bulkhead over reticule on floor.

Maximum Weights

Maximum Ramp	34940 lb	(15850 kg)
Maximum Takeoff	34830 lb	(15800 kg)
Maximum Landing	34390 lb	(15600 kg)
Maximum Zero Fuel	31080 lb	(14100 kg)

Minimum Crew

Two (2): Pilot and co-pilot

Max. Passengers

44

Maximum Baggage 1985 lb (900 kg) in rear cargo compartment. See the appropriate Weight and Balance Manual listed below.

Fuel Capacity Usable fuel (see Note 1 for unusable fuel):

Location	Volume (U.S. Gal.)	Weight (lb)	Moment Arm (in)
Right Wing	Main	270	1809
	Aux	420	2814
Left Wing	Main	270	1809
	Aux	420	1814
TOTAL USABLE	1380	9246	411.26

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.
Pressure fueling: Maximum pressure for pressure fueling is 50 psi.

Oil Capacity	<u>Volume (U.S. -quarts)</u>	<u>Moment Arm (in)</u>
	7.3 U.S. qt./tank on each engine	+350.47
	3.8 U.S. qt/tank usable	
	5.0 U.S. qt/tank on each propeller gear box	+315.97
	1.5 U.S. qt/tank usable	

Maximum Operating Altitude 25,000 ft.

Control Surface Movements	Elevator:	Up $30.0^\circ \pm 0.5^\circ$	Down $15.0^\circ \pm 0.5^\circ$
	Elevator tab (trim)	Up $+0.5^\circ \pm 0.5^\circ$	Down $+11^\circ \pm 0.5^\circ$
	Elevator tab (emergency trim)	Up $2^\circ \pm 0.5^\circ$	Down $7.0^\circ \pm 0.5^\circ$
	Elevator balance tab:	Up (for $+15^\circ$ elevator) $1.75 \pm 0.5^\circ$	
		Down (for -30° elevator) $9.50 \pm 0.5^\circ$	
	Rudder:	Right $19.0^\circ \pm 0.5^\circ$	
		Left $15.0^\circ \pm 0.5^\circ$	
	Rudder trim tab:	Right $5.0^\circ \pm 0.5^\circ$	
		Left $3.0^\circ \pm 0.5^\circ$	
	Rudder balance tab:	Right (for rudder 15° left) $2.0^\circ \pm 0.5^\circ$	
		Left (for rudder $+19^\circ$ right) $5.25^\circ \pm 0.5^\circ$	
	Ailerons:	Up $18.0^\circ \pm 0.5^\circ$	Down $18.0^\circ \pm 0.5^\circ$
	Aileron trim tabs:	Up $8.0^\circ \pm 0.5^\circ$	Down $8.0^\circ \pm 0.5^\circ$
	Aileron balance tabs:		
	trailing edge up for aileron 0° :	$5.0^\circ \pm 0.5^\circ$	
	trailing edge down for aileron 20° up:	$8.0^\circ \pm 0.5^\circ$	
	trailing edge up for aileron 20° down:	$18.0^\circ \pm 0.5^\circ$	
	Flaps (inner and outer)		
	Cruise	$0.0^\circ \pm 0.5^\circ$	
	Takeoff	$10.0^\circ \pm 0.5^\circ$	
	Approach	$15.0^\circ \pm 0.5^\circ$	
	Landing	$23.0^\circ \pm 0.5^\circ$	

All measurements are taken at trailing edge from neutral position.

Serial Nos. Eligible The Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for certification is made.

Import Requirements The FAA can issue a U.S. airworthiness certificate based on an Export Certificate of Airworthiness (Export C of A) signed by a representative of the Spanish DGAC on behalf of the European Community. The Export C of A should contain the following statement: "The aircraft covered by this certificate has been examined, tested, and found to conform

with the Type Design approved under U.S. Type Certificate No. A21NM and to be in a condition for safe operation.'

"Only CN-235-300 airplanes manufactured in Spain and accompanied by a Spanish export certificate of airworthiness are eligible for a United States Airworthiness Certificate."

Certification Basis

14 CFR Section 21.29 and 14 CFR Part 25, effective 1 February 1965, including Amendments 25-1 through 25-59, 25-61 and 25-62 and voluntary compliance with 14 CFR part 25.1419, Amendment 25-23 for parts not changed or not affected by the change.

Compliance with 14 CFR part 25.1419 Amendment 25-72 for the airframe ice protection system, 14 CFR part 25.1316 at Amendment 25-80 for the Integrated Electronic Display System (IEDS), and 14 CFR part 25.905(d) at Amendment 25-72.

Voluntary compliance with 14 CFR section 25.365(e) at Amendment 25-71 and 14 CFR part 25.571(e)(2) at Amendment 25-72.

14 CFR Part 34, including Amendments 14-1 through 14-2.

14 CFR Part 36, effective 1 December 1969, including Amendments 36-1 through 36-18.

Equivalent safety findings exist with respect to the following regulation. 14 CFR Section 25.1305 (a) (2): Fuel Quantity Indicator.

- Special Condition No. 25-ANM-22 (Docket No. NM-35), dated December 13, 1988, "Lightning and Radio Frequency (RF) Energy Protection" for parts not changed or not affected by the change.

- Radio Frequency (RF) Energy Protection requirements included in Special Condition No. 25-ANM-22 for parts changed or affected by the change.

Date of Application for Amended Type Certificate: September 8, 1998.

The Spanish DGAC originally type certificated this aircraft under its type certificate Number 01-86. The FAA validated this product under U.S. Type Certificate number A21NM. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the Spanish DGAC .

14 CFR part 26 – Continued Airworthiness and Safety Improvements for Transport Category Airplanes:

Based on 14 CFR § 21.29(a) for new import TCs, (or 14 CFR § 21.101(g) for changes to TCs), applicable provisions of 14 CFR part 26 are included in the certification basis. For any future 14 CFR part 26 amendments, the holder of this TC must demonstrate compliance with the applicable sections.

Required Equipment

The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.

Equipment approved for the Construcciones Aeronauticas S.A. CN-235-300 is listed in CASA Document No. 98-3016, CN-235-300 Equipment List, dated Nov. 1998 or as revised and approved by DGAC.

Federal Aviation Administration (FAA) approved Airplane Flight Manual, Construcciones Aeronauticas S.A. Model CN-235-300, Document No. D.T. 98-3002, published in the English language (DGAC approved on behalf of the FAA on December XX, 1998 or later DGAC approved revision) is required.

Service Information

Each of the documents listed below must state that it is approved by EASA – or for approvals made before September 28, 2003 – by the Spanish DGAC. Any such documents are accepted by the FAA and are considered FAA approved. Additionally, approvals issued by Construcciones Aeronauticas, S.A. under the authority of EASA approved Design Organization EASA.21J.032 - or for approvals made before September

28, 2003 - under the authority of Spanish DGAC Design Organization Approval No. 1 are considered FAA approved. These approvals pertain to the type design only.

- TC holder Service Bulletins, except as noted below,
- Structural repair manuals
- Vendor manuals referenced in TC holder Service Bulletins
- Airplane flight manuals
- Repair instructions.

Note: Design changes that are contained in TC holder Service Bulletins and that are classified as Level 1 Major in accordance with either the US/Spain or US/EASA Bilateral Aviation Safety Agreement – Implementation Procedures for Airworthiness, must be approved by the FAA.

Available Documents - Airplane Weight and Balance Control and Loading Data Document No. D.T. 98-3003.
 - Maintenance Review Board Report, Document No. MRB CN-235-PV.01.

NOTES

NOTE 1

Weight and Balance:

- (a) A current Weight and Balance must be in each aircraft at the time of original airworthiness certification and at all time thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.
- (b) The airplane empty weight and corresponding center of gravity location must include:
 Total engine and gearbox oil 47.6 lb at Sta 335.57 in.
 Type hydraulic fluid of 39.03 lb at Sta 460.35 in.
 Unusable fuel (77.05 lb) listed as follows:

<u>Unusable Fuel</u>	<u>U.S. Gallons</u>	<u>Pounds</u>	<u>Moment Arm (in)</u>
Drainable:			
Left Wing	4.25	28.47	409.68
Right Wing	4.25	28.47	409.68
Trapped Fuel:			
Tanks and fuel lines	3.00	20.10	410.07
Total unusable fuel	11.50	77.05	409.76

- (c) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.

NOTE 2

Airplane operation must be in accordance with the airplane Flight Manual (AFM) listed above. All placards required in either the approved AFM, the application operating rules, or the certification basis must be installed in the airplane.

NOTE 3

Required structural inspections, inspections times and retirement times for structural parts and for components are listed in the Airworthiness Limitation as presented in section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.

NOTE 4

Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in section 1.4.1. of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.

NOTE: The CMR's may also be included in any appendix to the Maintenance Review Board Document No. MRB CN-235-PV.01.

V. Model C-295 (Approved December 17, 1999 - SEE NOTE 5).

Engines 2 Engines – Pratt & Whitney of Canada, Model P&W 127G, free turbine turboprop.
Power turbine/propeller reduction gearing 16.6:1.

Fuel (a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:

<u>Designation</u>	<u>Specification</u>
Jet A, A-1, B	ASTM D1655
JP-4, JP-5	MIL-T-5624
JP-8	MIL-T-83133

Approved Fuel Additives and Inhibitors are set forth in sections 2-14 through 2-16 of CASA T.D. DT-5-C-97-5006

Engine Limits The Maximum continuous and takeoff static level rating at ISA:

Conditions	Max. Torque %	Max. ITT (°C)	Max. NH %	Max. NP %
Takeoff (normal) (5 min.)	101	765 [1]	102.3	101
Max Continuous	112	800	103.7	101
Transient [2] (20 seconds)	125	840	104.3	125
Max.Takeoff (One engine inoperative)	112	800	103.7	101

[1]. The value shown is an absolute maximum. The steady state ITT limit for the existing ambient conditions to be observed in a normal take-off (two engine operation)

[2]. The corresponding transient limit is further restricted to five seconds

Propeller and Propeller Limits 2 Propellers - Hamilton Standard Model - HSD 568F-5
Blades: 6, Model R815505-4
Diameter: 3,932 mm. (12.9 ft.)

Propeller Spinner: Hamilton Standard, P/N 790185-2
Propeller Deicer: Included in blade P/N

Airspeed Limits (IAS) Unless otherwise noted below, speeds are - indicated airspeeds.

V_{MO} (Maximum Operating)

Sea level	245 knots
7,000 ft	254 knots
14,000 ft	245 knots
25,000 ft	200 knots
Straight line variation between points.	

V_A (Maneuvering)

Sea level to 25,000 ft	190 knots
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V_{FE} (Flaps Extended)

10° (Takeoff)	185 knots
15° (Approach)	180 knots
23° (Landing)	175 knots

V _{LE} (Landing Gear Extended)	175 knots
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For other airspeed limits, see the appropriate Spanish DGAC Approved Airplane Flight Manual listed below.

C.G. Range See the appropriate Spanish DGAC Approved Airplane Flight Manual listed below.

Datum Sta 0.0 is located 33.19 in. forward of the fuselage jig point (rivet), which is located on the underside fuselage skin, immediately forward of fuselage frame 1A.

Mean Aerodynamic Chord (MAC) Length: 100.83 in.
L.E. of MAC: 377.61 aft of datum

Leveling Means Plumb-bob suspended from aft face of aft cockpit compartment bulkhead over reticule on floor.

Maximum Weights	Maximum Ramp	46,410 lb	(21.050 kg)
	Maximum Takeoff	46,300 lb	(21.000 kg)
	Maximum Landing	45,630 lb	(20.700 kg)
	Maximum Zero Fuel	40,780 lb	(18.500 kg)

Minimum Crew Two (2): Pilot and co-pilot

Max. Passengers Not applicable, freighter version.

Fuel Capacity Usable fuel (see Note 1 for unusable fuel):

Location	Volume (U.S. Gal.)	Moment Arm (in)
Main	424	410.2
Right Wing		
Aux	571	414.72
Main	424	410.2
Left Wing		
Aux	571	414.72
TOTAL USABLE	1990	412..8

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.
Pressure fueling: Maximum pressure for pressure fueling is 50 psi.

Oil Capacity Volume (U.S. -gal) Moment Arm (in)

The following data apply to each powerplant.

Usable Oil: 2.90 U.S. Gal.	347.83
Total Oil: 6.08 U.S. Gal.	351.61

Maximum Operating Altitude 25,000 ft.

Control Surface Movements	Elevator:	Up: $-25.0^{\circ} \pm 0.5^{\circ}$ Down: $+12.5^{\circ} \pm 0.5^{\circ}$
	Elevator tab (trim)	Up: $+0.0^{\circ} \pm 0.5^{\circ}$ Down: $+12.0^{\circ} \pm 0.5^{\circ}$
	Elevator tab (emergency trim)	Up: $+0.0^{\circ} \pm 0.5^{\circ}$ Down: $+12.0^{\circ} \pm 0.5^{\circ}$
	Elevator balance tab:	Up (for $+12.5^{\circ}$ elevator) $-2.2 \pm 0.5^{\circ}$ Down (for -25° elevator) $7.7 \pm 0.5^{\circ}$
	Rudder:	Right: $-19.0^{\circ} \pm 0.5^{\circ}$ (-22° in Expander mode) Left : $+12.0^{\circ} \pm 0.5^{\circ}$ ($+16.5^{\circ}$ in Expander mode)
	Rudder trim tab:	Right: $-5.0^{\circ} \pm 0.5^{\circ}$ (-7° trim in standby) Left : $+5.0^{\circ} \pm 0.5^{\circ}$ ($+7^{\circ}$ trim standby)
	Rudder balance tab:	Right (for rudder - 19° left) $-7.7^{\circ} \pm 0.5^{\circ}$ Left (for rudder $+15^{\circ}$ right) $+2.4^{\circ} \pm 0.5^{\circ}$
	Ailerons:	Up $18.0^{\circ} \pm 0.5^{\circ}$ Down $18.0^{\circ} \pm 0.5^{\circ}$

Aileron trim tabs:	Up - $8.0^{\circ} \pm 0.5^{\circ}$ Down $8.0^{\circ} \pm 0.5^{\circ}$
Aileron balance tabs:	
trailing edge up for aileron 0° :	$5.0^{\circ} \pm 0.5^{\circ}$
trailing edge down for aileron 18° up:	$-6.7^{\circ} \pm 0.5^{\circ}$
trailing edge up for aileron -18° down:	$16.7^{\circ} \pm 0.5^{\circ}$
Flaps (inner and outer)	
Cruise	$0.0^{\circ} \pm 0.5^{\circ}$
Takeoff	$10.0^{\circ} \pm 0.5^{\circ}$
Approach	$15.0^{\circ} \pm 0.5^{\circ}$
Landing	$23.0^{\circ} \pm 0.5^{\circ}$

All measurements are taken at trailing edge from neutral position.

Serial Nos. Eligible

The Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for certification is made.

Import Requirements

The FAA can issue a U.S. airworthiness certificate based on an Export Certificate of Airworthiness (Export C of A) signed by a representative of the Spanish DGAC on behalf of the European Community. The Export C of A should contain the following statement: 'The aircraft covered by this certificate has been examined, tested, and found to conform with the Type Design approved under U.S. Type Certificate No. A21NM and to be in a condition for safe operation.'

"Only C-295 airplanes manufactured in Spain and accompanied by a Spanish export certificate of airworthiness are eligible for a United States Airworthiness Certificate."

Certification Basis

The certification basis is based on the CASA Model CN-235-200: 14 CFR part 21.29 and 14 CFR part 25, effective 1 February 1965, including Amendments 25-1 through 25-59, 25-61, 25-62 for parts not changed or not affected by the change.

For changed portions of the aircraft: 14CFR Section 21.29 and 14 CFR Part 25, as amended by Amendments 25-1 through 25-89, Amendment 25-91 for Section 25.351, Amendment 25-72 for Section 25.1419(Ice Protection), and excluding Amendment 25-64 for Section 25.562 (c)(5) for the pilot and copilot seats.

The aircraft is not certified against ditching

14 CFR Part 34, including Amendments 34-1 through 34-3.

14 CFR Part 36 including Amendments 36-1 through 36-21.

Equivalent Safety Finding exists with respect to the following regulation:

- FAR 25.1149 "Propeller Speed and Pitch Control" (ref. FAA Issue Paper P-2)
- FAR 25.103 & 25.201 "Use of 1-g Stall Speed Criteria Instead of Minimum Speed in the Stall as a Basis for Determining Compliance for Airplanes with Stall Identification Systems" (ref. FAA Issue Paper F-6).

Exemptions:

The following exemptions have been granted:

- Exemption 6708 to FAR §25.571 (e)(1) for the "Bird Strike Speed"
- Exemption 6929 to §C36.9(e)(1) of 14 CFR Part 36 for "Approach Speed Criteria", and to §C36.3(c) of 14 CFR Part 36 "Sideline Noise Criteria."
- Partial Grant of Exemption 7088 to FAR §25.723 for "Shock Absorption Tests" (SEE NOTE 5).

Special Conditions:

- High Intensity Radiated Fields (HIRF)

- Use Automatic Takeoff Thrust Control System (autofeather/APR) for Approach Climb and Go-Around

Date of application: The reference date of application for the Amended Type Certificate is January 10, 1997.

The Spanish DGAC originally type certificated this aircraft under its type certificate Number 01-86. The FAA validated this product under U.S. Type Certificate number A21NM. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the Spanish DGAC .

14 CFR part 26 – Continued Airworthiness and Safety Improvements for Transport Category Airplanes:

Based on 14 CFR § 21.29(a) for new import TCs, (or 14 CFR § 21.101(g) for changes to TCs), applicable provisions of 14 CFR part 26 are included in the certification basis. For any future 14 CFR part 26 amendments, the holder of this TC must demonstrate compliance with the applicable sections.

Required Equipment

The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.

Equipment approved for the Construcciones Aeronauticas S.A. C-295 is listed in CASA Document No. DT-5-C-99-5005, C-295 Equipment List.

Federal Aviation Administration (FAA) approved Airplane Flight Manual . Construcciones Aeronauticas S.A. Model C-295, Document No. D.T. 5-C-97-5006, published in the English language (DGAC approved on behalf of the FAA).

Service Information

Each of the documents listed below must state that it is approved by EASA – or for approvals made before September 28, 2003 – by the Spanish DGAC. Any such documents are accepted by the FAA and are considered FAA approved. Additionally, approvals issued by Construcciones Aeronauticas, S.A. under the authority of EASA approved Design Organization EASA.21J.032 - or for approvals made before September 28, 2003 - under the authority of Spanish DGAC Design Organization Approval No. 1 are considered FAA approved. These approvals pertain to the type design only.

- TC holder Service Bulletins, except as noted below,
- Structural repair manuals
- Vendor manuals referenced in TC holder Service Bulletins
- Airplane flight manuals
- Repair instructions.

Note: Design changes that are contained in TC holder Service Bulletins and that are classified as Level 1 Major in accordance with either the US/Spain or US/EASA Bilateral Aviation Safety Agreement – Implementation Procedures for Airworthiness, must be approved by the FAA.

Available Documents

- Airplane Weight and Balance Control and Loading Data Document No. D.T.5-C-97-5007.
- Maintenance Review Board Report, Document No. MRB C-295 PV.01.

NOTES

NOTE 1

Weight and Balance:

- (a) A current Weight and Balance must be in each aircraft at the time of original airworthiness certification and at all time thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.
- (b) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.

- NOTE 2 Airplane operation must be in accordance with the airplane Flight Manual (AFM) listed above. All placards required in either the approved AFM, the applicable operating rules, or the certification basis must be installed in the airplane.
- NOTE 3 Required structural inspections, inspections times and retirement times for structural parts and for components are listed in the Airworthiness Limitation as presented in section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 5-C-99-5008.
- NOTE 4 Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in section 1.4.1. of Construcciones Aeronauticas, S.A. Document No. D.T. 5-C-99-5008.
- NOTE 5 On December 20, 2000, the DGAC submitted a statement (Ref. No: 61/C-255/00-354) that the C-295 design complies with FAR §25.723 based on analysis of the CASA C-295 Main Landing Gear and Nose Landing Gear shock absorption tests, contingent on the inclusion of modification S30429. The FAA has accepted the DGAC's statement of compliance, and finds the CASA C-295 aircraft complies with FAR §25.723. Consequently the CASA Model C-295 Type Certificate, with Type Design Document (Master Drawing List) DT-98-3308 Rev C and modification S30429 will be valid after December 31, 2000, the date of expiration for Partial Grant of Exemption No. 7088. Accordingly, all CASA Model C-295 aircraft certificated in the United States must include modification S30429.

....END....